## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau



## T COLOR BUSINESS A COLUMN COLOR COLOR COLOR COLOR SUBSECUENTI COLOR COLO

(43) International Publication Date 29 January 2004 (29.01.2004)

**PCT** 

## (10) International Publication Number WO 2004/010687 A1

(51) International Patent Classification7:

H04N 5/225

(21) International Application Number:

PCT/IB2003/003198

(22) International Filing Date:

11 July 2003 (11.07.2003)

(25) Filing Language:

**English** 

(26) Publication Language:

English

(30) Priority Data: 02077931.0

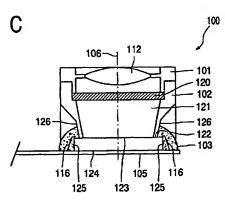
18 July 2002 (18.07.2002) EI

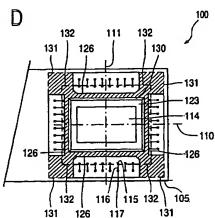
- (71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): GROOT, Erik, H. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

- (74) Agent: DUIJVESTIJN, Adrianus, J.; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: CAMERA MODULE, HOLDER FOR USE IN A CAMERA MODULE, CAMERA SYSTEM AND METHOD OF MANUFACTURING A CAMERA MODULE





(57) Abstract: The invention relates to a camera module 100. The camera module 100 comprises a holder 102, which provides a light-conducting channel 121. Within the light-conducting channel 121 a lens 112 having an optical axis 106 is present. A solid-state image sensor 113 is present near an end 122 of the light-conducting channel 121. The image sensor 113 is provided with an image pick-up section 114, which is oriented perpendicularly to the optical axis 106. Near the end 122 of the light-conducting channel, forming part of the holder 102, aligning means 131 are present for aligning the image pick-up section 114 with the optical axis 106. In one embodiment of the camera module 100, the inner wall 130 of the holder 102 is substantially rectangular, seen in cross-sectional view in a direction perpendicular to the optical axis 106. Bulges 131 present near the corners of the rectangle form the aligning means. The bulges 131 are provided with L-shaped recesses 132 in which the lateral surfaces 125 of the solid-state image sensor 113 are placed substantially without play. This method of aligning the image pick-up section 114 with the optical axis 106 simplifies the manufacture of the camera module 100.

